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Press release

congatec premiers AMD Ryzen™ Embedded V2000 processor

on COM Express Compact

**Massively more power on much smaller footprint**

**Deggendorf, Germany, 10 November 2020** \* \* \* congatec – a leading vendor of embedded and edge computing technology – significantly broadens the application areas of its AMD Ryzen™ Embedded processor based COM Express Type 6 platforms towards smaller but more powerful system designs by premiering the brand new AMD Ryzen™ Embedded V2000 processor launched today on the COM Express Compact footprint. The new congatec conga-TCV2 powered by the new Ryzen Embedded V2000 processor impresses with up to 2x generational uplift in performance per watt[[1]](#endnote-1), a 2x more CPU cores compared to previous generations,[[2]](#endnote-2) at only 76% of the previous size[[3]](#endnote-3) on a 100% pin-compatible form factor.

The powerful AMD Ryzen Embedded V2000 SoC integrates AMD Radeon™ graphics, with up to 7 GPU compute units. The performance per watt improvementsi of the new ’Zen 2’ cores used by the CPU are based on the 7nm manufacturing process technology. The architecture optimization also adds an estimated 15% more instructions per clock to this improvement[[4]](#endnote-4).

With up to 8 cores and 16 threads on a single BGA footprint, the new Computer-on-Modules are great candidates for digitization and parallel-processed edge analytics – including workload balancing and consolidation enabled by virtual machines on the basis of congatec’s RTS real-time hypervisor implementations.

Further application areas include all standard embedded applications, ranging from industrial box PCs and thin clients to embedded computing systems with impressive compute and graphics performance. Other applications include smart robotics, e-mobility and autonomous vehicles that use deep learning to optimize their situational awareness.

“With up to 16 threads, high performance embedded system designs at the edge can now execute twice as many tasks at given TDP ranges, which is great news for edge computing as more and more parallel tasks occur at the edge. It is also impressive to see integrated graphics performance continues to offer outstanding 3D graphics quality on up to four independent 4k60 displays. All this comes in scalable TDP classes ranging from 54 Watt down to extremely low-power configurations consuming as little as 10 Watt,” explains Martin Danzer, Director of Product Management at congatec.

“We are pleased to work with congatec in launching the Ryzen Embedded V2000 series based Computer-on-Module (COM) Express modules,” said Amey Deosthali, Director of Product Marketing, Embedded Business Group, AMD. “COM Express Type 6 form factors from congatec offer cutting-edge graphics and outstanding CPU performance based on our new AMD Ryzen™ Embedded V2000 processors.”

**The feature set in detail**

The new conga-TCV2 high-performance COM Express Compact modules with Type 6 pinout are based on the latest AMD Ryzen™ Embedded V2000 multi-core processors and will become available in 4 different flavors:

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| **Processor** |  | **Cores/ Threads** |  | **Clock [GHz] (Base/Boost)[[5]](#endnote-5)** |  | **L2/L3  Cache (MB)** |  | **GPU Compute Units** |  | **TDP [W]** |
| AMD Ryzen™ Embedded V2748 |  | 8 / 16 |  | 2.9 / 4.25 |  | 4 / 8 |  | 7 |  | 35 – 54 |
| AMD Ryzen™ Embedded V2718 |  | 8 / 16 |  | 1.7 / 4.15 |  | 4 / 8 |  | 7 |  | 10 – 25 |
| AMD Ryzen™ Embedded V2546 |  | 6 / 12 |  | 3.0 / 3.95 |  | 3 / 6 |  | 6 |  | 35 – 54 |
| AMD Ryzen™ Embedded V2516 |  | 6 / 12 |  | 2.1 / 3.95 |  | 3 / 6 |  | 6 |  | 10 – 25 |

These modules offer up to double the compute performance per watti and double the core count over previous generationsii. Thanks to symmetrical multiprocessing capabilities, they also provide particularly high parallel processing performance with up to 16 threads. The modules feature 4MB L2 cache, 8MB L3 cache, and up to 32GB energy-efficient and fast dual-channel 64-bit DDR4 memory with up to 3200 MT/s and ECC support for maximum data security. The integrated AMD Radeon™ graphics with up to 7 compute units continues to support applications and use cases that need high-performance graphics computing.

The conga-TCV2 Computer-on-Module supports up to four independent displays with up to 4k60 UHD resolution over 3x DisplayPort 1.4/HDMI 2.1 and 1x LVDS/eDP. Further performance-oriented interfaces include 1x PEG 3.0 x8 and 8x PCIe Gen 3 Lanes, 2x USB 3.1 Gen 2, 8x USB 2.0, up to 2x SATA Gen 3, 1x Gbit Ethernet, 8 GPOIs I/Os, SPI, LPC, as well as 2x legacy UART provided by the board controller.

The supported hypervisor and operating systems include RTS Hypervisor as well as Microsoft Windows 10, Linux/Yocto, Android Q and Wind River VxWorks. For safety-critical applications, the integrated AMD Secure Processor helps with hardware-accelerated encryption and decryption of RSA, SHA and AES. TPM support is onboard as well[[6]](#endnote-6).

More information about the new conga-TCV2 high-performance COM Express Compact Type 6 module is available at: <https://www.congatec.com/en/products/com-express-type6/conga-TCV2/>

**About congatec**

congatec is a rapidly growing technology company focusing on embedded and edge computing products. The high-performance computer modules are used in a wide range of applications and devices in industrial automation, medical technology, transportation, telecommunications and many other verticals. Backed by controlling shareholder DBAG Fund VIII, a German midmarket fund focusing on growing industrial businesses, congatec has the financing and M&A experience to take advantage of these expanding market opportunities. congatec is the global market leader in the computer-on-modules segment with an excellent customer base from start-ups to international blue chip companies. Founded in 2004 and headquartered in Deggendorf, Germany, the company reached sales of 126 million US dollars in 2019. More information is available on our website at [www.congatec.com](https://eur03.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.congatec.com%2F&data=04%7C01%7C%7Cd6654884cfee4283460108d87b43e959%7C1b738660126645879d5454e9ad89e4cb%7C0%7C0%7C637394878932424857%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=M6r1ukH%2B1yMwc0gunbmVRuBaaijO315wnAy2ocS4xvM%3D&reserved=0) or via [LinkedIn](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.linkedin.com%2Fcompany%2F455449&data=04%7C01%7C%7Cd6654884cfee4283460108d87b43e959%7C1b738660126645879d5454e9ad89e4cb%7C0%7C0%7C637394878932434848%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=FMg3YUv0q09oP%2BW7%2FXJLHYdiBdwZeZbi5jJ7p%2B99RSE%3D&reserved=0), [Twitter](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmobile.twitter.com%2FcongatecAG&data=04%7C01%7C%7Cd6654884cfee4283460108d87b43e959%7C1b738660126645879d5454e9ad89e4cb%7C0%7C0%7C637394878932444843%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=Fp9Z0BnXIz0%2FlzJYotRWqmFrCf6949cCxX%2BbVDRBErs%3D&reserved=0) and [YouTube](https://eur03.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.youtube.com%2FcongatecAE&data=04%7C01%7C%7Cd6654884cfee4283460108d87b43e959%7C1b738660126645879d5454e9ad89e4cb%7C0%7C0%7C637394878932444843%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=5jW4UF3e6O1zetb%2FFdq3Sq1R6T09OuPadNWqu6Fc%2FnY%3D&reserved=0).

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1. Testing conducted by AMD Performance Labs as of July 2020 on the Ryzen™ Embedded V2718 and June 2018 on the Ryzen Embedded V1605B processor both at 15 watts (STAPM mode enabled) using Cinebench R15 nt. Results may vary. EMB-170 [↑](#endnote-ref-1)
2. Ryzen™ Embedded V2000 SoCs offer up to eight CPU cores. Ryzen™ Embedded V1000 SoCs offer up to four CPU cores. EMB-168 [↑](#endnote-ref-2)
3. The predecessor AMD Ryzen™ Embedded V1000 is available on the far larger COM Express Basic footprint. [↑](#endnote-ref-3)
4. AMD “Zen 2” CPU-based system scored an estimated 15% higher than previous generation AMD “Zen” based system using estimated SPECint®\_base2006 results. SPEC® and SPECint® are registered trademarks of the Standard Performance Evaluation Corporation. See www.spec.org. GD-141 [↑](#endnote-ref-4)
5. Max boost for AMD Ryzen and Athlon processors is the maximum frequency achievable by a single core on the processor running a bursty single-threaded workload. Max boost will vary based on several factors, including, but not limited to: thermal paste; system cooling; motherboard design and BIOS; the latest AMD chipset driver; and the latest OS updates. GD-150 [↑](#endnote-ref-5)
6. Video codec acceleration (including at least the HEVC (H.265), H.264, VP9, and AV1 codecs) is subject to and not operable without inclusion/installation of compatible media players. GD-176 [↑](#endnote-ref-6)